July 2014

No-Twist Roll Pinions and Drive Pinions

M. J. Knott

	ACT	INF
KNIGHT		X
LONGNECKER		X
MARSTERS		X
MERCER		X
MORGAN, PA. S.		X
MURRAH		X
POOLE, H. W.		X
GEN. FILE		X
Jaques, D.		✓
Smola, R.	✓	
BERGSTROM		
BJORK		
Morgan, W.		✓
MacNutt, H.		✓
Bagdonovich, J.		✓
COMTOIS		✓
DUNCAN		
ERICKSON, A.		
FALCONER		
FONTAINE, H.		
FONTAINE, R.	✓	
GILVAR		
GRESHAM		
HITCHCOCK		
HERMES		
HILL		
HOLBROOK		
KINNICUTT		
KOTT		✓
MacPHERSON		
McMILLEN		
McNAUGHER		
MEIGS		
MORGAN, M.		
MORGAN PES.		
MURRAY		
NEELY Prescott, W.		✓
NYGARD		
ORDEE Rivernider		✓
PRENTICE		
RANDALL		
REARDON		
ROBERTSHAW		
SIEURIN		
SPRINGER		
VIRGIN Benson, B.		✓
WIGINGTON		
WILSON		✓
WINTERS		
WOOD	✓	
WRIGHTSON	✓	
WYKES		✓
YOUMANS		
Westerling, W.		✓
COMB. CONT.		
MORGOIL		
WIRE DRWG.		
PITTS.		
Gasper, W.		✓

MORGAN CONSTRUCTION CO.
ROLLING MILL DEPT. MEMORANDUM

TO: As Noted

DATE: 28 March 1967

FROM: M. J. Knott

SUBJECT: NO-TWIST Roll Pinions and Drive Pinions
Allowable Deviations From .308-.305
Normal Tooth Thickness Specification

DISCUSSION

1. We are now manufacturing the NO-TWIST roll pinions and drive pinions ourselves. Some of our first lots have not had sufficient stock for tooth grinding. In deciding on allowable deviations, the gears are divided into two groups.

2. ROLL PINIONS

On the 6" Stands the roll pinions, which are integral with the roll shafts, will be loaded on only one side of the gear teeth. The loaded side for the two roll shafts, R. H. and L. H. helix angle, is shown on 167668. On the Bethlehem 8" Stands, the roll pinions are not integral with the roll shafts. However, because they are mounted on the roll shaft with the single radial datum surface forward, the loaded side of the gear teeth is again always the same.

When there is insufficient stock for tooth grinding, the loaded sides should be completely ground. A minor qualification is that the ends of the teeth, 10% of the face width on each side, does not have to clean up.

The unloaded side should be ground to obtain the normal tooth thickness, .308"-.305". The minimum normal tooth thickness on the portions of the tooth that do not clean up must not be under .298". The unground areas will be hand polished for appearance.

The shop would like the 8" roll pinion drawing 171219 to indicate the loaded sides of the gear teeth, as 167668 does for the 6" roll pinions.

3. DRIVE PINIONS

The drive pinions, 167669 for 6" Stands and 171220 for 8", may be loaded on either side of the teeth. In cases of insufficient stock for grinding, the normal tooth thickness may be down to .301. Both sides must be completely ground, with the minor qualification

that the ends of the teeth, 5% of the face width on each side, does not have to clean up. The fact that these gears are narrower than the roll pinions is the explanation for the 10% on the one and 5% on the other.

Maurice J. Knott

MJK/cac